

## SPECIFICATIONS, DESCRIPTION OF WORKS DRAWINGS & PHOTOS

### **Preparation of the site (refer to plate. 2 in the appendix).**

- Removal of the collapsed building material of the 'dig house'.
- Conservation of the collected stones which will be suitable for reuse at the proposed site.
- The surplus has to remain in the site organized in cube formations inside the fenced area.
- Spraying and cutting the vegetation in the whole area of the archaeological site. The herbicide should be applied only where vegetation is seen. In the areas covered with *opus sectile* floor, the herbicide should be applied by local injection. The base component of the herbicide should be Glyphosate or equivalent which is suitable for vegetation removal on and around masonry monuments. The selection of the herbicide should respect the environmental regulations of the European Union for the use of herbicides in environmentally sensitive areas.
- After the vegetation has dried up cutting removal of existing vegetation from the whole archaeological site, from the *opus sectile* floors, from the building, from the roof and generally from all surfaces and wall tops, pruning and cutting branches (northern aisle – fig tree) that affect the work including attack with biocide to the roots of any existing trees which have penetrated the structure.
- Cleaning the cruciform baptismal font from debris. [archaeologist should supervise the procedure]
- Cleaning the pit inside the church (in front of the central apse) from the rubbish and ensure a safe enclosure with a dense metal grade (1 x 1 cm opening to allow visibility of the pit without compromising safety) **(refer to plate. 4.A.)**.
- Cleaning the cistern from the rubbish and the well mouth from debris [archaeologist should supervise the procedure]. Ensure a safe enclosure with dense metal grade (as above) **(refer to plate 4.A.)**.
- Removal of all the projector lamps and electrical cables from the site and within the ancient masonry.
- Removal of the concrete niche with rebar reinforcements on the southern wall.

<p><b>Temporary Scaffolding</b></p> <p>In order to access the upper parts of the church and the roof, scaffolding construction up to the height of the building walls have to be used, respecting the local code of practice for access and working scaffoldings under the control of the Health &amp; Safety officer.</p> <p>Careful consideration should be given whilst accessing the roof so as not to damage the surfaces of the walls and generally the archaeological remains of the area.</p>
<p><b>Roofworks</b></p> <ul style="list-style-type: none"> <li>- Removal of existing vegetation, cleaning of vegetation of the covered roof surface, application of chemicals (herbicide) against re-growth of vegetation.</li> <li>- The mentioned herbicide should be applied only where vegetation is visible. The base component of the herbicide should be Glyphosate or equivalent which is suitable for vegetation removal on and around masonry monuments.</li> <li>- After the removal of the vegetation, the missing mortar due to roots should be replaced with the specified mortar (see APPENDIX II). This should be done to avoid water infiltration through the cleaned areas.</li> </ul>
<p><b>Structural interventions [see APPENDIX II].</b></p> <ul style="list-style-type: none"> <li>- Repair and consolidate the east and south arch of the church which initially were supporting the dome, now lost.</li> <li>- Stone replacements.</li> <li>- Rebuilding the gap created by the removal of the concrete niche in the southern wall of the Holy Bema.</li> <li>- Removal of the iron on RC beam after inspection</li> <li>- Use of compatible mortar (see APPENDIX II).</li> </ul>
<p><b>Consolidation and protection of the <i>opus sectile</i> floors.</b></p> <ul style="list-style-type: none"> <li>- Removal of vegetation (permanent and seasonal).</li> <li>- Fixing/grouting of free marble pieces using compatible mortar (the material to be used will be specified by the specialist).</li> <li>- Fixing/mounting of edges of the pavements using compatible mortar (the material to be used will be specified by the specialist).</li> </ul>

- Strengthening of the raised areas (impregnation of injectable mortar) (the material to be used will be specified by the specialist).
- Reburial of the areas covered with *opus sectile* floor (see APPENDIX III - orange colour).

**\*NB: The steps a-d have to be undertaken by a mosaic conservator and/or a person who has at least 5 years' experience in mosaic's floor conservation projects. During the step e, the aforementioned person will supervise the procedure.**

#### **Reburial method [see APPENDIX III]**

The reburial method is a mild and reversible intervention which will protect not only the *opus sectile* floors but also the remains of the other floors and, most important, the stratigraphy of the archaeological site in general. It will be also used for the rainwater management solutions, avoiding the excavation but preferring to raise the level (fill in with earth to allow easier drainage of the site). The presence of the archaeologist and the conservator during the whole procedure of reburial is of vital importance. These experts must be there every day of this week, to give instructions and control the reburial itself but also the levelling, inclinations and width (for the rainwater management. It is stressed that this is a delicate intervention which cannot be based on a standard drawing but will vary in order to adopt to the level and nature of the ground of each area. Therefore the constant presence of the experts mentioned above should be included in the tender documents.

Properties of the materials which will be used for the reburials:

1. High Density Polyethylene Geotextile fabric with 85-95% covering (roll 3 m. x 50 m).
2. Fluvial (river) sand.
3. Limestone white/beige fine gravel (2-6 mm).
4. Calcareous soil.

#### **Rainwater management solutions [see APPENDIX IV]**

The management of the rainwater will be done to the best possible level without drastic and invasive actions.

A drainage system must be created avoiding the excavation but preferring to raise the level (fill in with earth to allow easier drainage of the site).

Minimum 1% (one percent) inclination has to be achieved for water drainage in the reburial areas. The inclination directions have to be followed from the related drawing (APPENDIX IV).

Three areas of rainwater drainage are proposed:

- West
- Southwest
- Southeast

The reburial layer should be higher along the walls in order to avoid stagnant water close to the wall foundations. (see section example, pl.4)

Specifically:

- Inside the church: Reburial of the main church (excluding the raised Holy Bema area) (blue colour).
  - 1<sup>st</sup> layer geotextile.
  - 2<sup>nd</sup> layer calcareous soil (minimum width 15 cm). The width of this layer will vary based on the inclination of the layer which should lead to the western entrance of the church (higher points along the walls in order to avoid stagnant water close to the wall foundations). A stone should be removed in order to archive the water flowing outside the church (see APPENDIX IV).
- North aisle: Reburial (for the reburial method see APPENDIX III) (orange colour) inclination towards the west – shore.
- West part of the Early Christian basilica (west of the Byzantine church): Reburial (for the reburial method see APPENDIX III - orange colour) inclination towards the west – shore.
- Baptismal complex (orange colour): Reburial (for the reburial method see APPENDIX III). Inclination towards the NW corner of the rectangular hall (lower point).
- South annexes (orange colour): Reburial inclination towards west, towards the access walkway.
- East atrium: reburial along the north wall covering the colonnade (blue colour).

Reburial:

- 1<sup>st</sup> layer geotextile.
- 2<sup>nd</sup> layer calcareous soil (minimum width 30 cm).

The width of this layer will vary based on the inclination of the layer which should lead to the southeast of the atrium (higher points along the walls in order to avoid stagnant water close to the wall foundations).

- West atrium and *phiale* (fountain) (orange colour): Reburial (for the reburial method see APPENDIX III). Reburial inclination towards north, towards the earthen corridors. The fountain will be partially reburied.
  - Access walkway (green colour)

#### Reburial:

- 1<sup>st</sup> layer: geotextile
- 2<sup>nd</sup> layer: 10 cm fluvial sand
- 3<sup>rd</sup> layer: 10 cm of white gravel
- 4<sup>th</sup> layer: c. 15 cm compressed (by water spraying) calcareous soil (the width of the 3<sup>rd</sup> layer will vary depending on the necessary inclinations for the management of the rainwater).

Reburial inclination from south towards north following the corridor and then turning 90° towards the west.

The reburial will be done in two levels (APPENDIX IV, plate 2). The first from the entrance up to the end of the opus sectile floor where a plastic channel drain grate hidden in the reburial layer will be placed transversally in order to collect and guide the rainwater towards the western earthen corridors. From that point a step will lead to a lower level which will continue up to the church and the will turn 90° towards the coast.

**NB. No digging should be carried out at all!**

#### New fencing installation [see APPENDIX V]

- a. New fencing around the archaeological area using the existing cement base. The existing holes (for the old wooden beams) should be reused.
- b. In the areas (towards the 'dig house' up to the shore) where no old cement base is available, galvanized poles should be inserted into precast concrete bases.
- c. New entrance and two lateral openings.
- d. Main entrance from the south side.
- e. Access for people with mobility disabilities (next to the dig house).
- f. Material: galvanized steel + rope wire.
- g. High: 1.00 m.

- h. North limits of the site (restaurant limits): it is required to raise the level of the existing dry enclosure wall in order to reach 1.00 m. high, facing the restaurant. The material (ashlar blocks) to be used for this extension will originate from the fallen 'dig house'.

**NB. No digging should be carried out for the installation of the fence!**

**Management of the public circulation within the archaeological site (refer to plates 3, 4).**

- Create obligatory walkways in order to control the movement of the visitors.
- Block the southern entrance of the church with rope wire and guide the visitors towards the western entrance (the southern entrance is in front of the Early Christian underground vaulted cistern. It's advisable to prohibit the access to this fragile part of the site for safety reasons and to prevent damage).
- Limiting the areas of the cistern and the well with a row of rope wire secured on galvanized posts fixed on cement bases (Ø 4 cm / high 50 cm.). Evidenced with warning signs (**refer to plate 4.B.**)
- Access walkway = the presence of compressed calcareous soil above the fluvial sand and the white gravel will ease the access and provide a more clear walkway through the site.
- Access for people with mobility disabilities from the SW entrance of the site. Facilitate the access for wheel chairs along the western path leading to the church.
- Protection barrier and warning signs for cliff face along west walkway (**refer to plate 4.B.**).

**Enhancement of the presentation of the site to improve public understanding and enjoyment.**

**[see APPENDIX VI]**

- Install informative/interpretative panels in strategic areas to inform the visitors (**refer to plate 3**)
- Number of the panels: 4
- Dimensions of the panel:
  - A. 100 x 67 cm
  - B. 100 x 67 cm
  - C. 70x50 cm
  - D. 70x50 cm
 High: 140 cm
- Material: Plexiglas, galvanized steel.

- ⇒ The text, the photographic and graphic material for the panels should be prepared by the archaeologists in charge.
- ⇒ The design of the panels should be carried out by a professional.

Creation of a **stand** in order to accommodate the icon of Saint Philon which should be moved from the niches. Movable, metal with glass. Place it to the west of the southern entrance close to the southern wall (facing north). [See APPENDIX VII].

**Repairs and construction of the dig house, consolidation and protection of the remaining structures. [see APPENDIX VIII].**

After the partial collapsing of the so called 'dig house', this traditional building is in serious danger of a complete destruction in the following years. Any limited (rescue) consolidations works may slow down the deterioration process but they won't prevent the final collapse. Consequently, this ruined structure after the removal of the collapsed material will be more fragile and it will fall down soon causing serious safety issues within the archaeological site. The appropriate solution would be the restoration of the still standing part of the house (one room), consolidating the ruins of the rest of the house.

It is suggested to preserve not only the general outline of the parts of the house which will not be reconstructed, but also other significant features, such as the remains of the balcony, the renderings and the external staircase.

This traditional building can be used for storing and protecting some of the architectural members (capitals, bases, columns) found in the area of the archaeological site and others located by our team in the wider area of the ancient city (see APPENDIX I, arch. No. 7 = column base).

All the archaeological items which will be stored inside the 'Dig House' should be registered, photographed and drawn by the archaeologist in charge.

The catalogue should be submitted to the UNDP.

**Materials:**

Concrete bases for fencing posts must be manufactured off the site; concrete to be C30.

No ordinary Portland cement will be used unless stated in the specifications.

Ready mix hydraulic lime will be used.

## APPENDICES TO SPECIFICATIONS

**APPENDIX I** will be given to the successful contractor after contract signature.

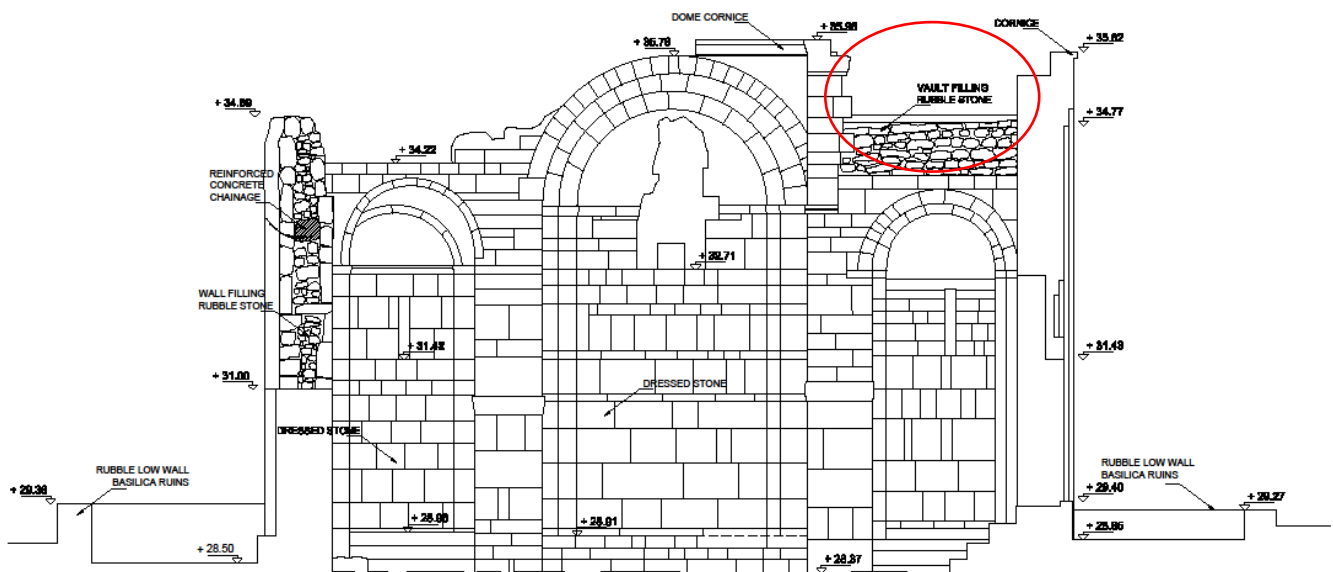
### **APPENDIX II**

#### **Structural interventions**

- Repair and consolidate the east and south arch of the church which initially were supporting the dome, now lost.

##### **East Arch**

- Consolidate by filling the voids between the stones with lime mortar to create structural unity.



SECTION B-B

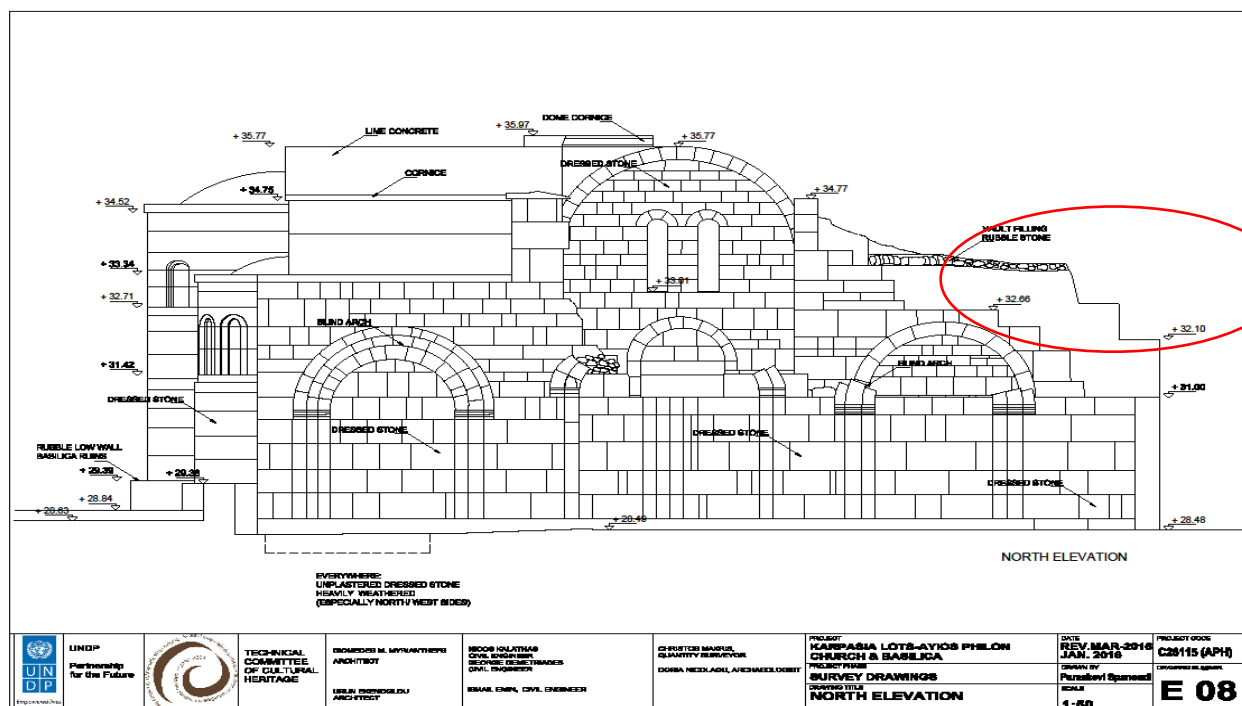
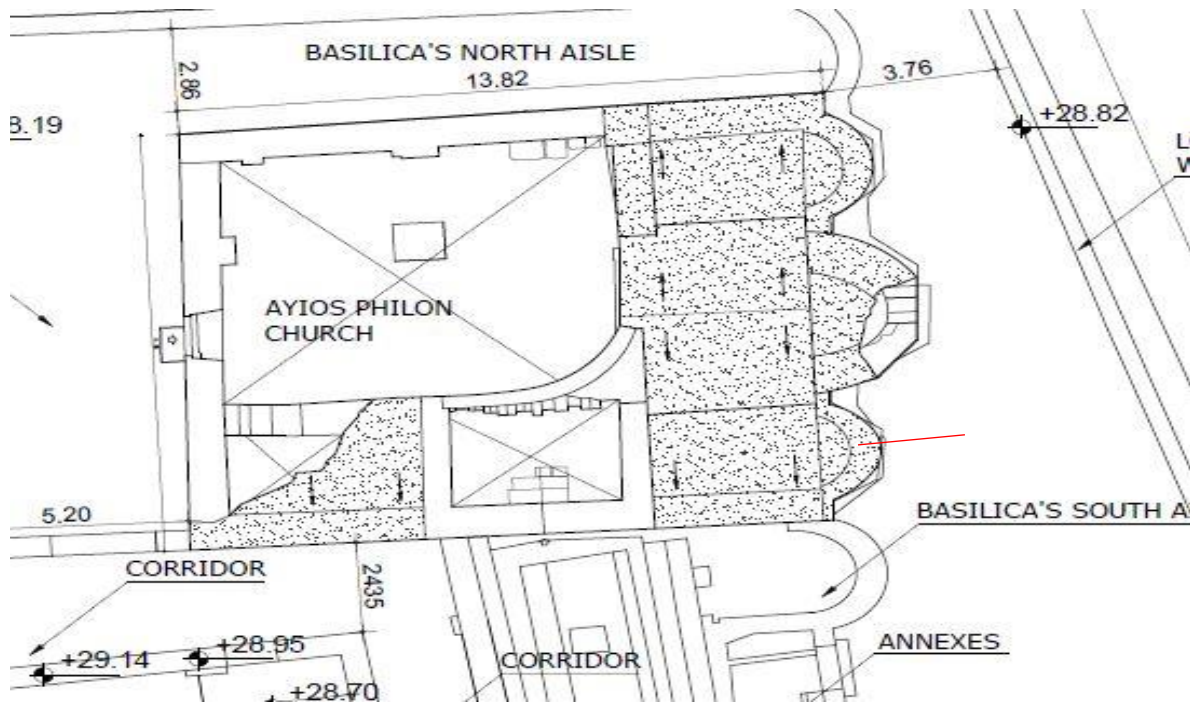
	<b>UNDP</b> Partnership for the Future		<b>TECHNICAL COMMITTEE OF CULTURAL HERITAGE</b>	DEMETRIOS M. MYLIANTHAKIS ARCHITECT  LULIA DIMITROPOULOU ARCHITECT	NICOLOU IULIANAS CIVIL ENGINEER REGISTERED TRADESMAN CIVIL ENGINEER  ISSAH ENIN, CIVIL ENGINEER	CHRISTOPHER MAURUS, QUANTITY SURVEYOR  DORRA NECHLAH, ARCHAEOLGIST	PROJECT <b>KARPASSIA LOTS-AYIOS PHELON CHURCH &amp; BASILICA</b> PROJECT PHASE <b>SURVEY DRAWINGS</b> DRAWING TITLE <b>SECTION B-B</b>	DATE <b>REV. MAR. 2016</b> JAN. 2016 DRAWN BY Paraskevi Spanou SCALE <b>1:50</b>	PROJECT CODE <b>C20115 (APH)</b> C20115 (APH) <b>E 06</b>
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##### **South Arch**

- Consolidate by filling the voids between the stones with lime mortar to create structural unity

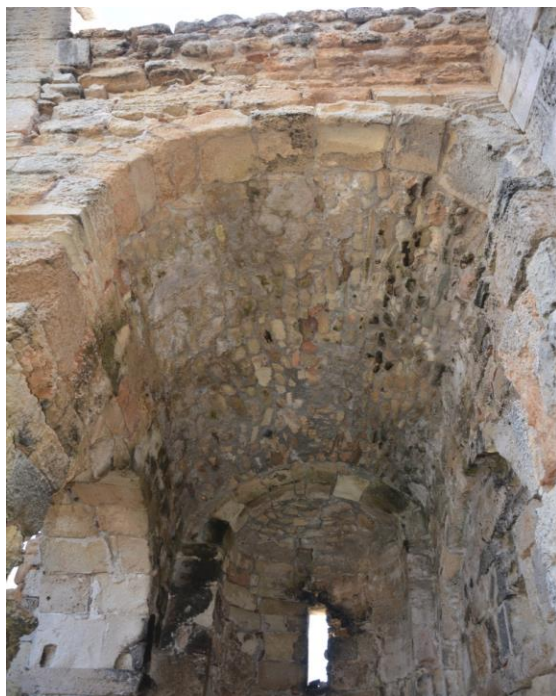
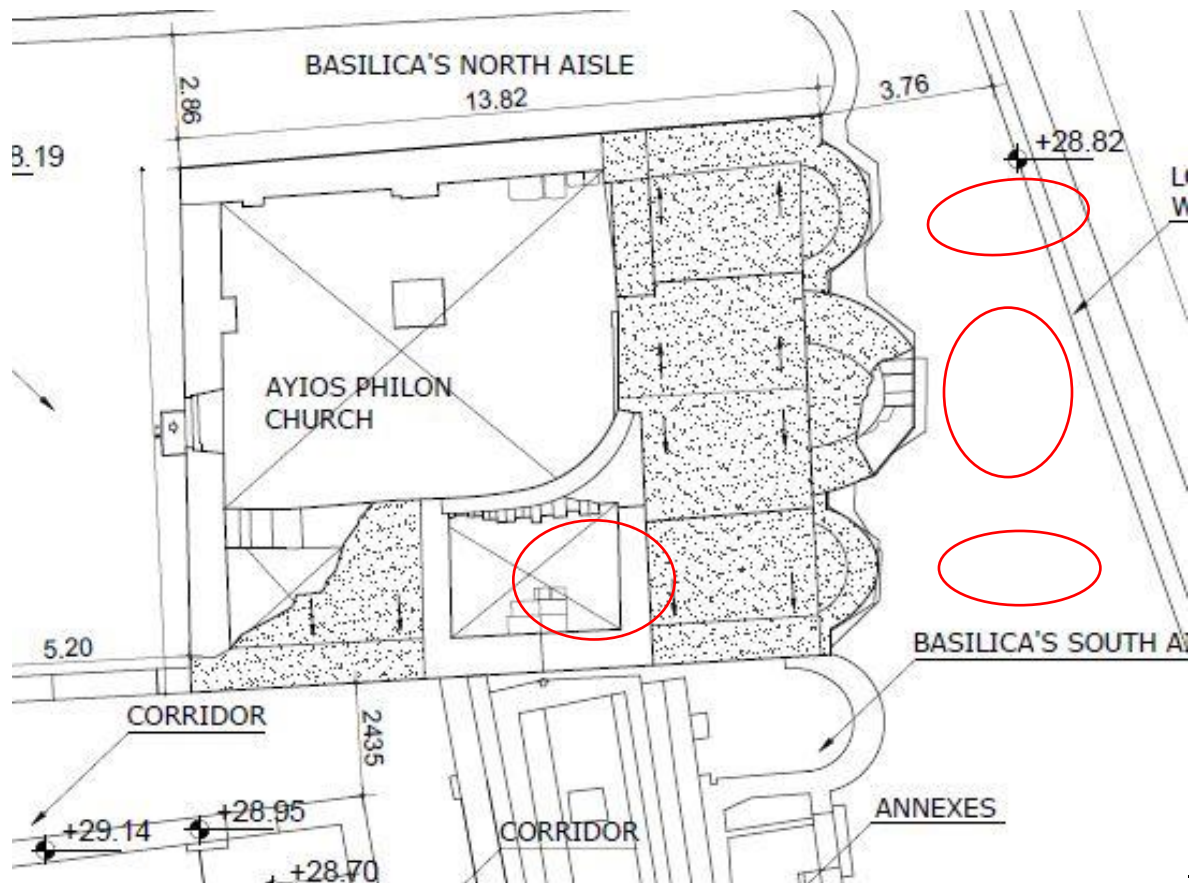


- Apply 1mm thick carbon fiber sheet 12cm in width on the extrados of the arch in order to counteract the forces created by the weight of pendantive. Apply on lime based plaster as per manufacturer's instructions and cover with lime based plaster. In order to achieve reversibility. (Sika Carbo-dur or equivalent)



- Repair and consolidate the deteriorated areas of the vaults as shown on the drawing.  
Eastern Vaults (north/central/south) + Southwestern Vault

- Re-point the areas shown and use lime mortar and same size rubble stones where missing.





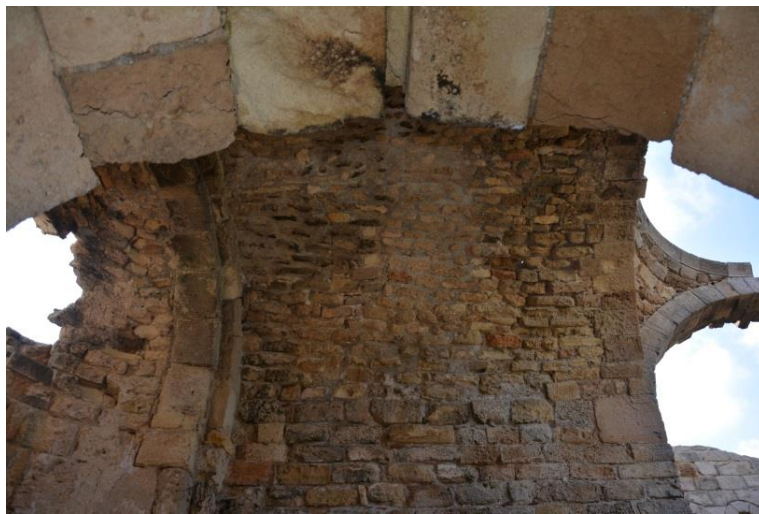


South vault. Re-pointing.



North vault. Re-pointing.





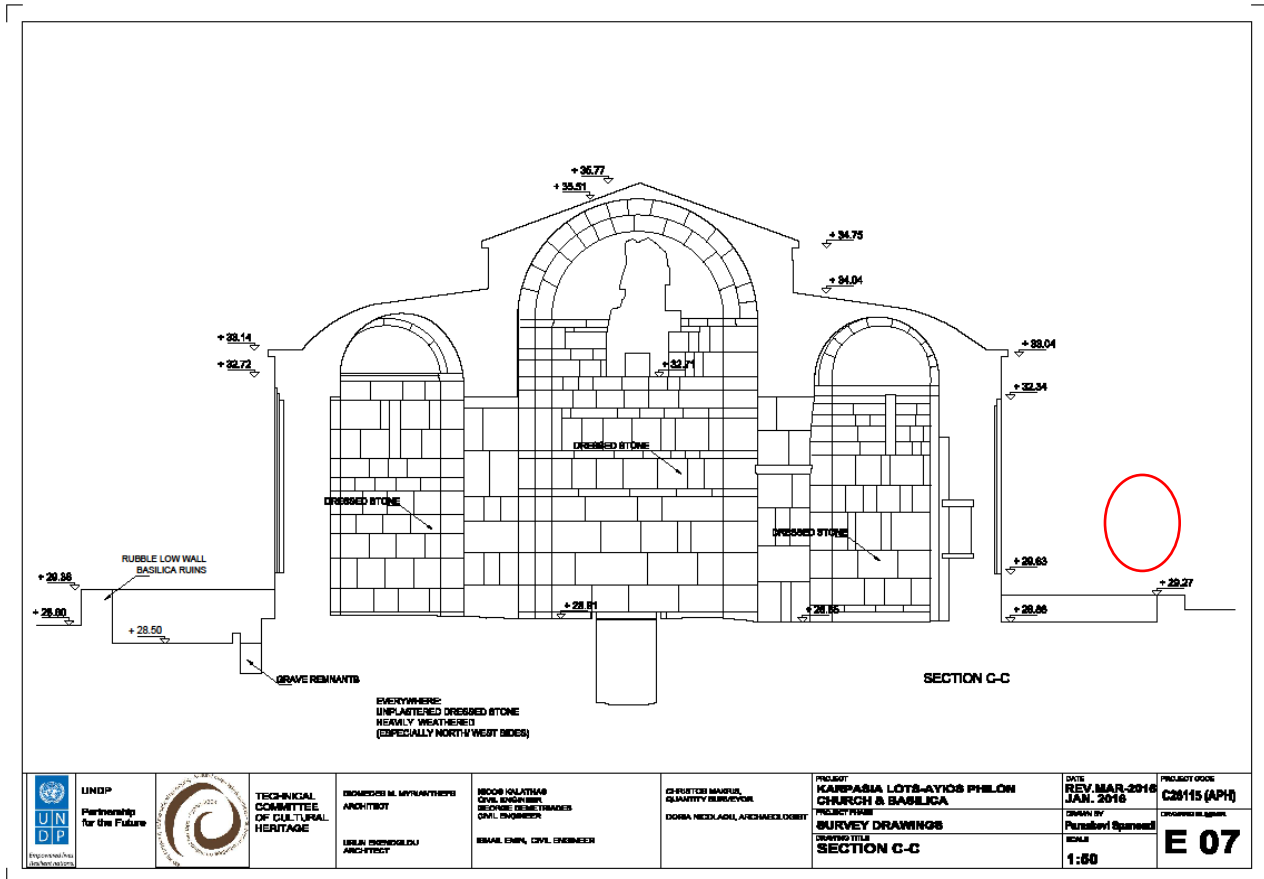
Central Vault. Re-pointing.



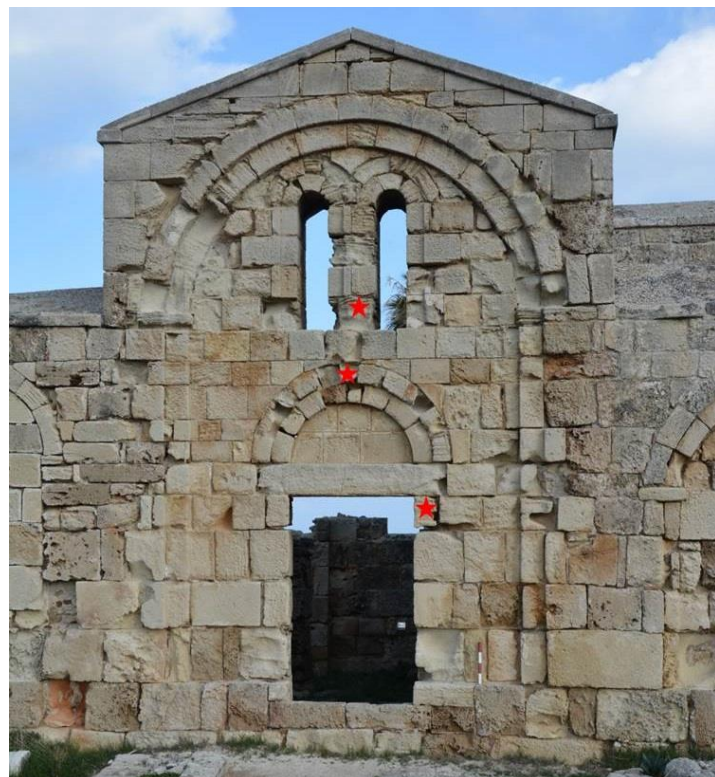
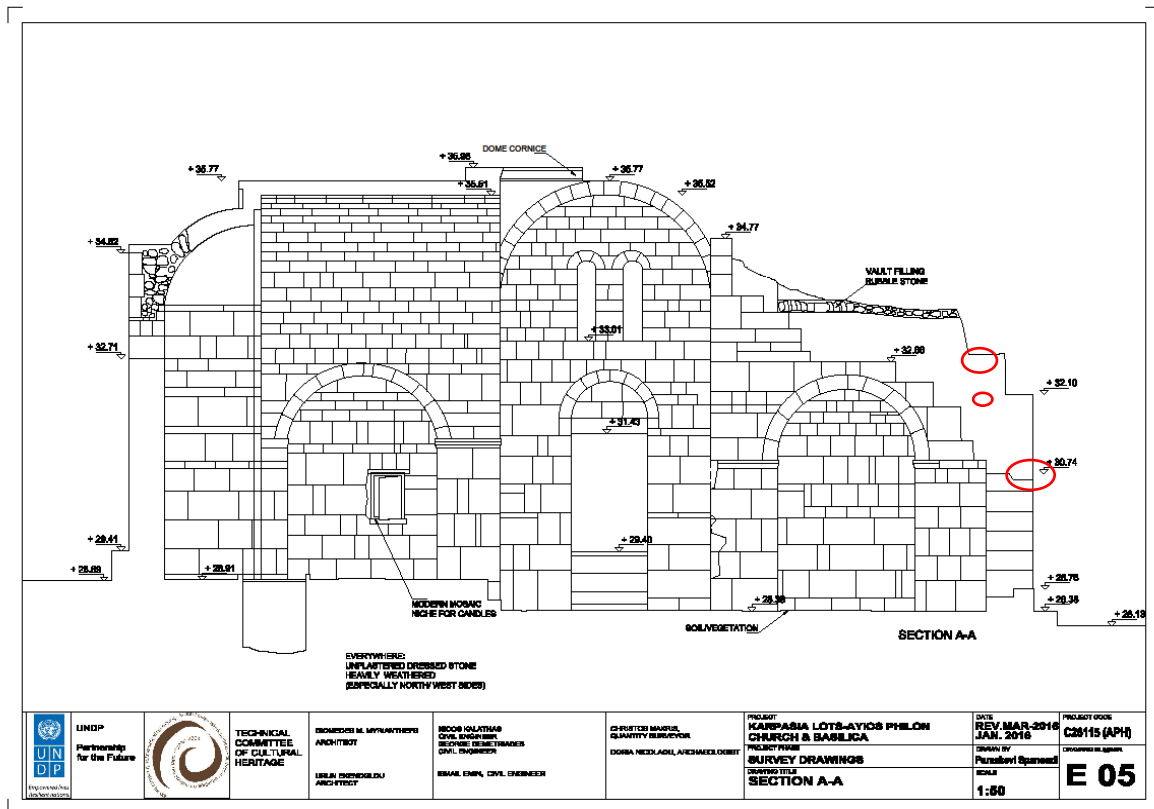
Southwest vault. Re-pointing.

- Rebuilding the gap created by the removal of the concrete niche in the southern wall of the Holy Bema.

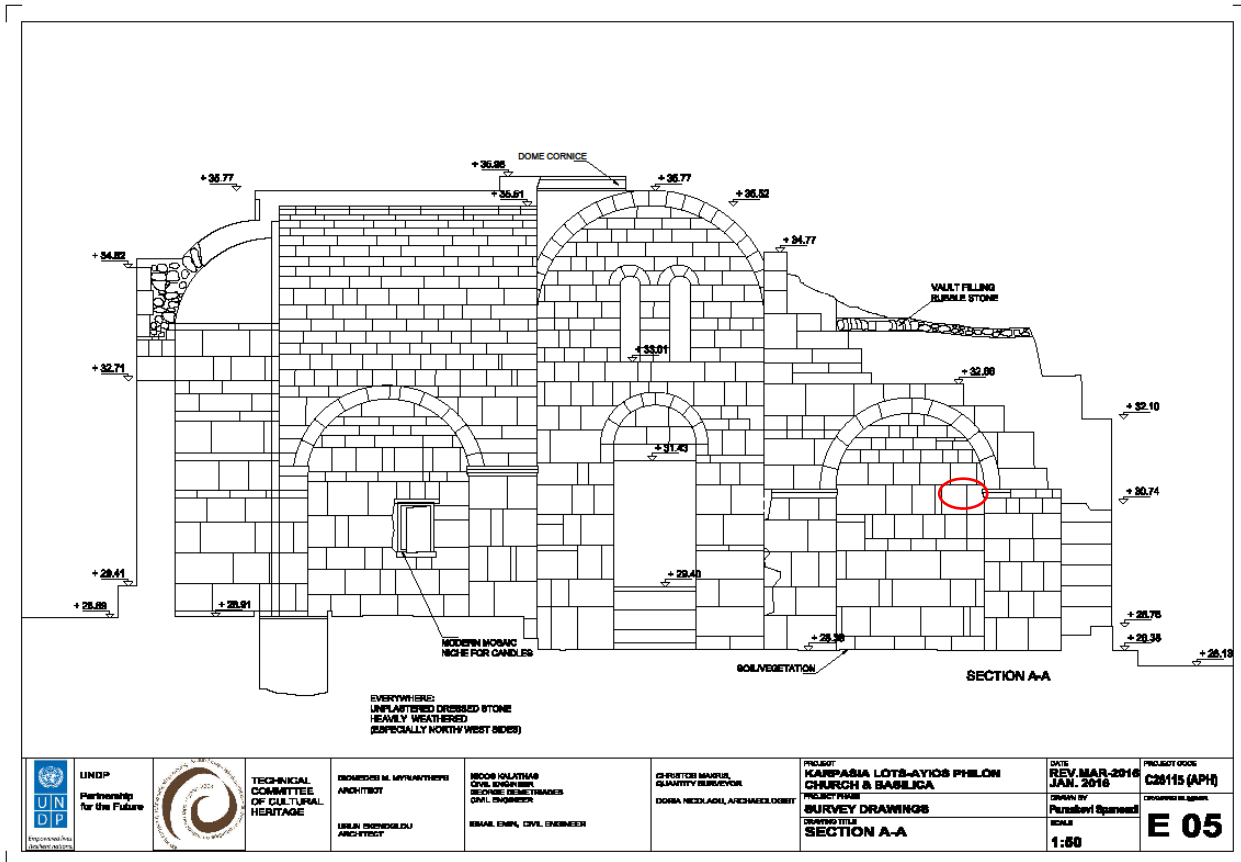
- Use similar size of stones with an indent of 2 cm. New stones should be of similar characteristics as the stone to be replaced i.e. similar mechanical and physical properties



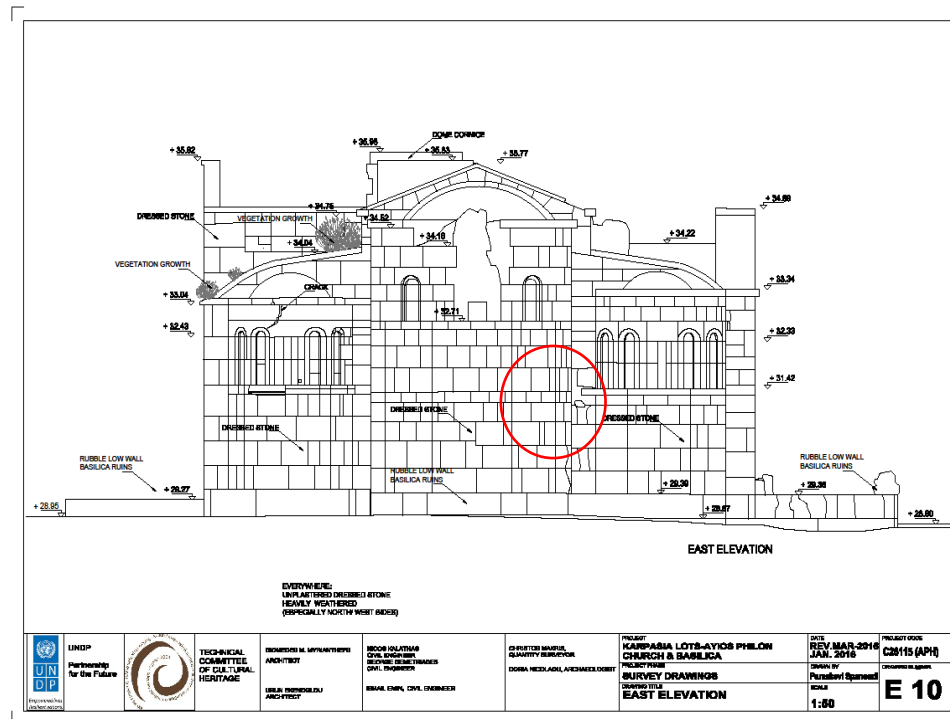
- Stone replacements
  - 5 heavily weathered stones that are posing danger to the structural stability of the building have to be replaced as shown. New stones should be of similar characteristics as the stone to be replaced i.e. similar mechanical and physical properties.







- Fill the crack of the south apse with mortar (internally and externally), to prevent water penetration and erosion.



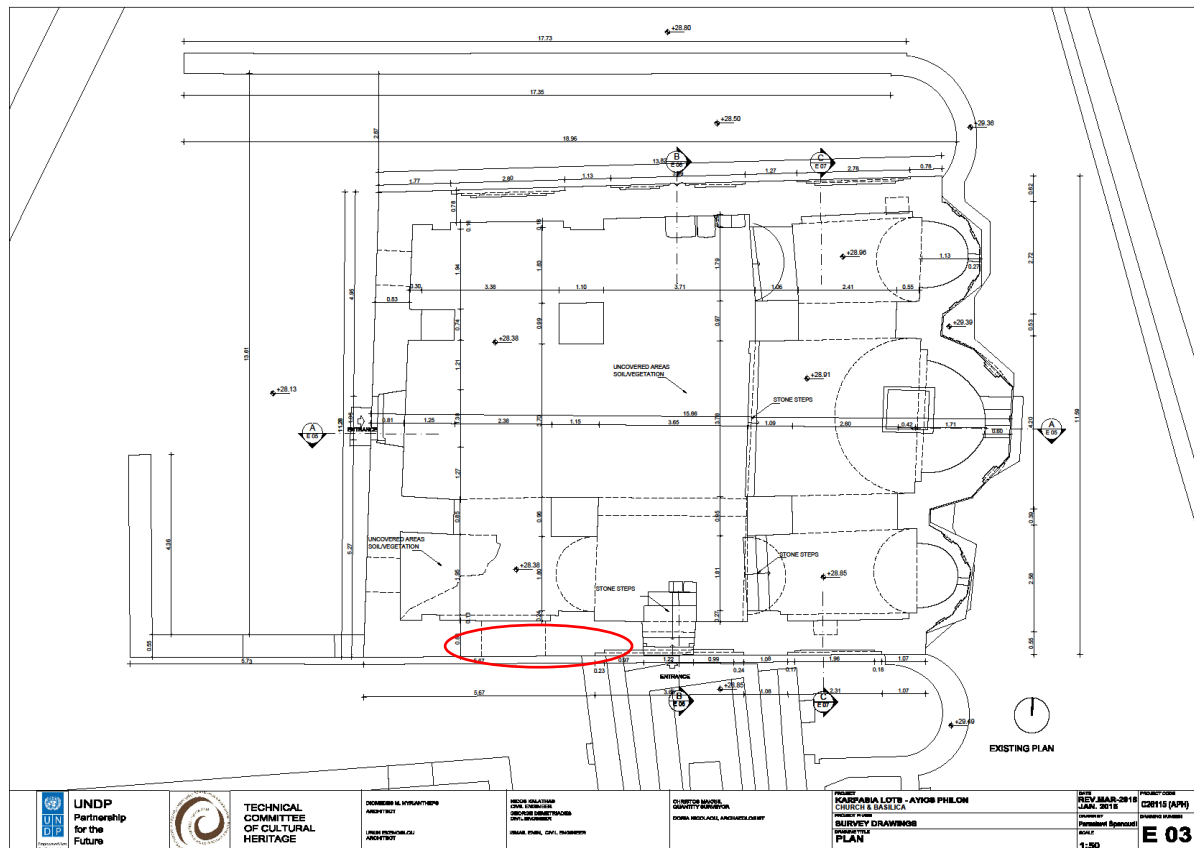




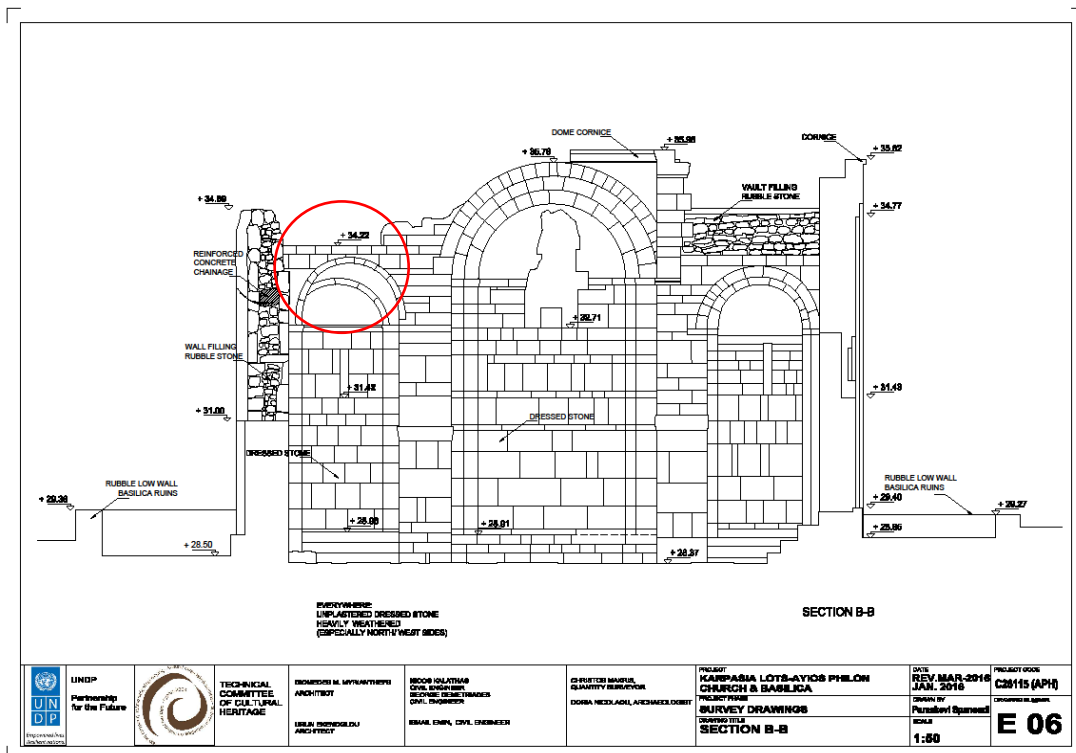
- Protect the horizontal parts of the walls from rainwater stagnating there and penetrating the wall. This could be achieved by applying a thin layer of mortar with a slight slope. The mortar should be ca. 2 cm in thickness at the highest part and the thickness should decrease gradually to 0.5-1.cm to achieve the slope.



- Outer side of the south wall: Check and repair (repoint, fill the gaps) of the base of the wall which will be covered by the reburial of the access corridor.



- Removal of the iron on RC beam after inspection
  - There are remains of RC Beam as shown in pictures. Carefully chisel to see if the beam is continuing towards inside. If not remove and replace with stone. If it is continuing cut the tips of the rotten irons and paint with anti rust ( Sika Armatec or equivalent)

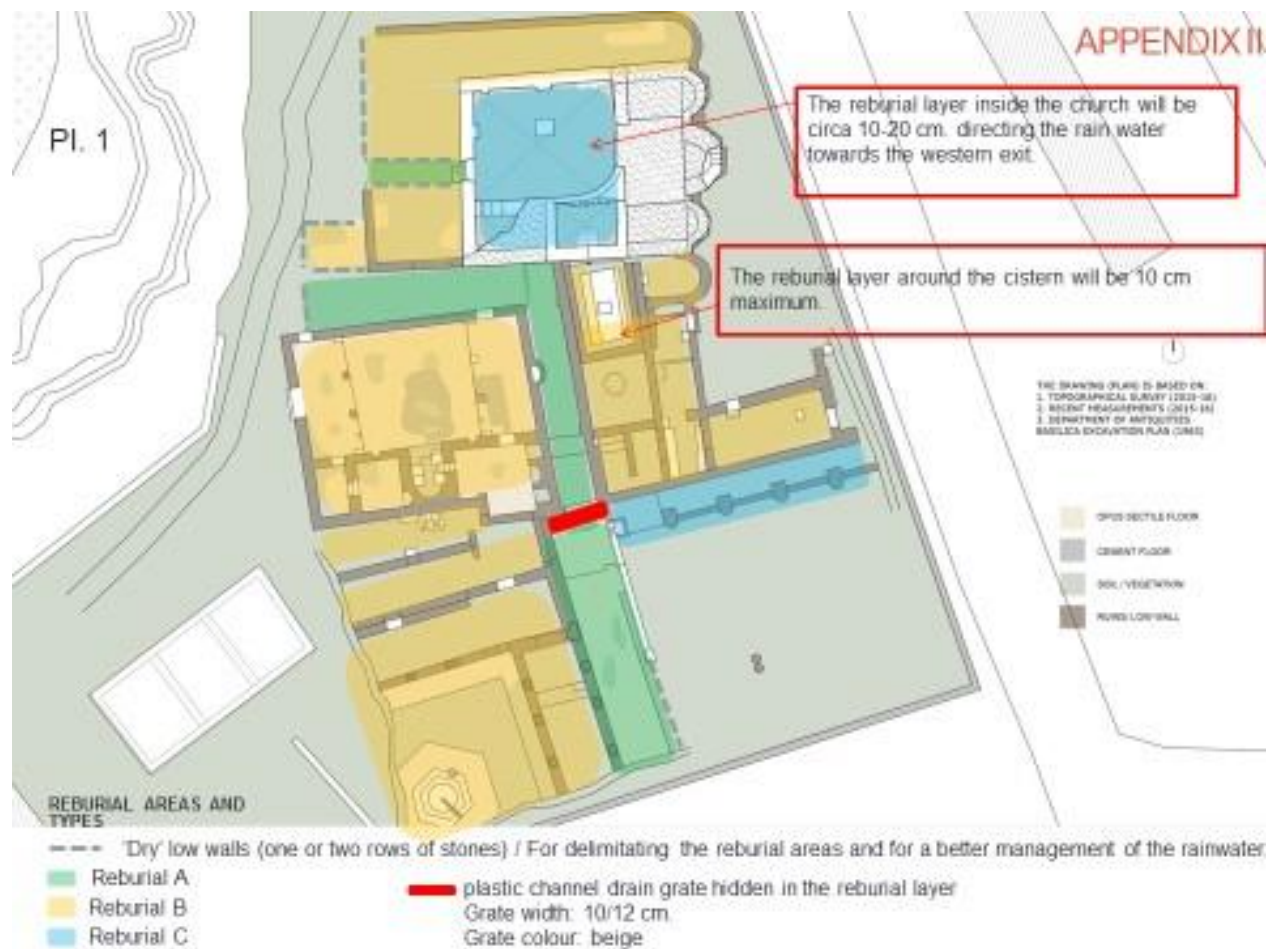


- Careful removal of all electric fittings and past rusted iron fittings, repairing the voids with specified mortar.





- Use of compatible mortar (lime mortar) and stones
  - In all areas where mortar is going to be used the following has to be followed:  
New mortars should be mixed according to manufacturer's specifications and should not be used after one hour, or when the mix is no longer workable without the addition of water. **Albaria Allettamento** lime mortar or other approved or equivalent can be used.

**APPENDIX III****Explanation of pl. 1 legend****Reburial Types**Reburial Type A (access walkway)

- 1<sup>st</sup> layer: geotextile
- 2<sup>nd</sup> layer: 5 cm fluvial sand
- 3<sup>rd</sup> layer: 5 cm of white gravel
- 4<sup>th</sup> layer: c. 15 cm compressed (by water spraying) calcareous soil (the width of the 4<sup>th</sup> layer will vary depending on the necessary inclinations for the management of the rainwater)

Reburial Type B

- 1<sup>st</sup> layer: geotextile
- 2<sup>nd</sup> layer: c. 10 cm fluvial sand
- 3<sup>rd</sup> layer: c. 10 cm white gravel (the width of the 3<sup>rd</sup> layer will vary depending on the necessary inclinations for the management of the rainwater)

Reburial Type C

- 1<sup>st</sup> layer: geotextile
- 2<sup>nd</sup> layer: c. 15 cm calcareous soil (the width of the 2<sup>nd</sup> layer will vary depending on the necessary inclinations for the management of the rainwater)

Examples from other similar reburial works (Reburial B type):



1<sup>st</sup> layer



2<sup>nd</sup> layer



3<sup>rd</sup> layer



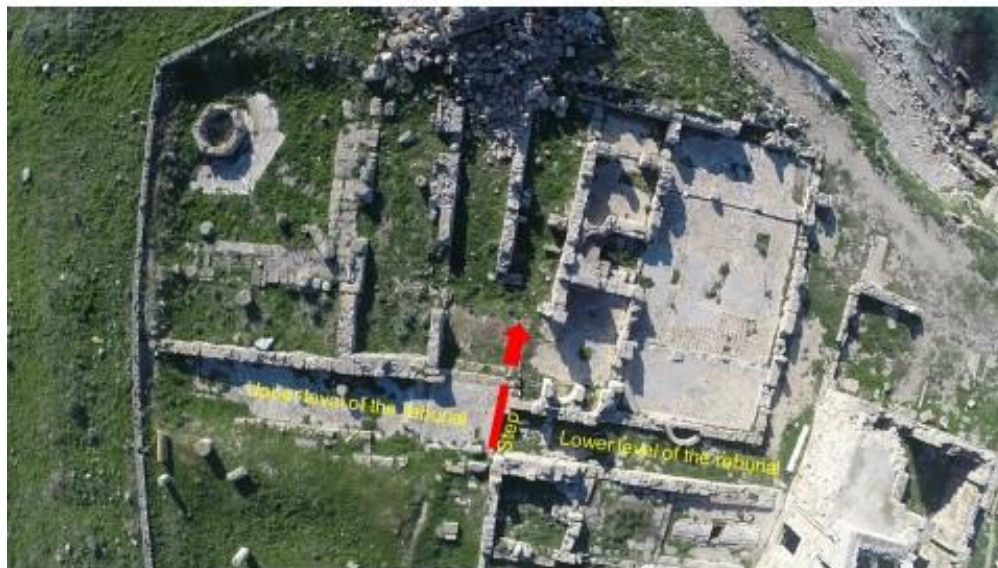
## APPENDIX IV



Pl. 1: Arrows show the reburials' inclinations for the rainwater management.

Access walkway

Pl. 2.



- Plastic channel: drain grate hidden in the reburial layer, Grate width: 10/12 cm / Grate colour: beige  
Rainwater flowing towards west

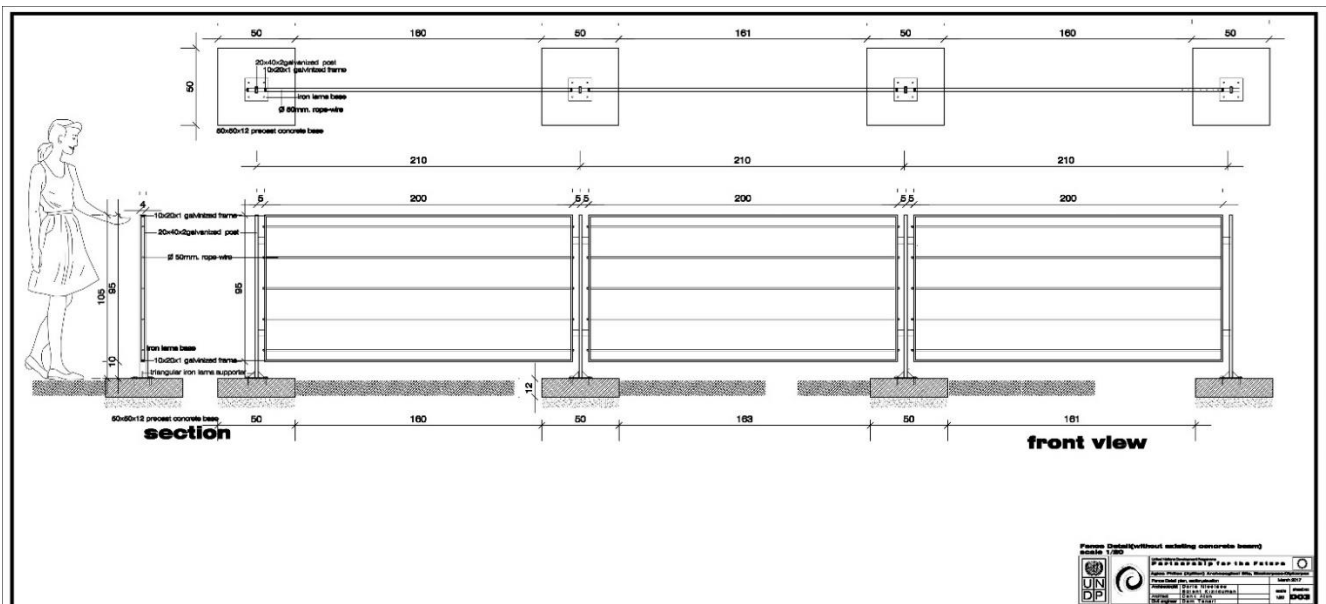
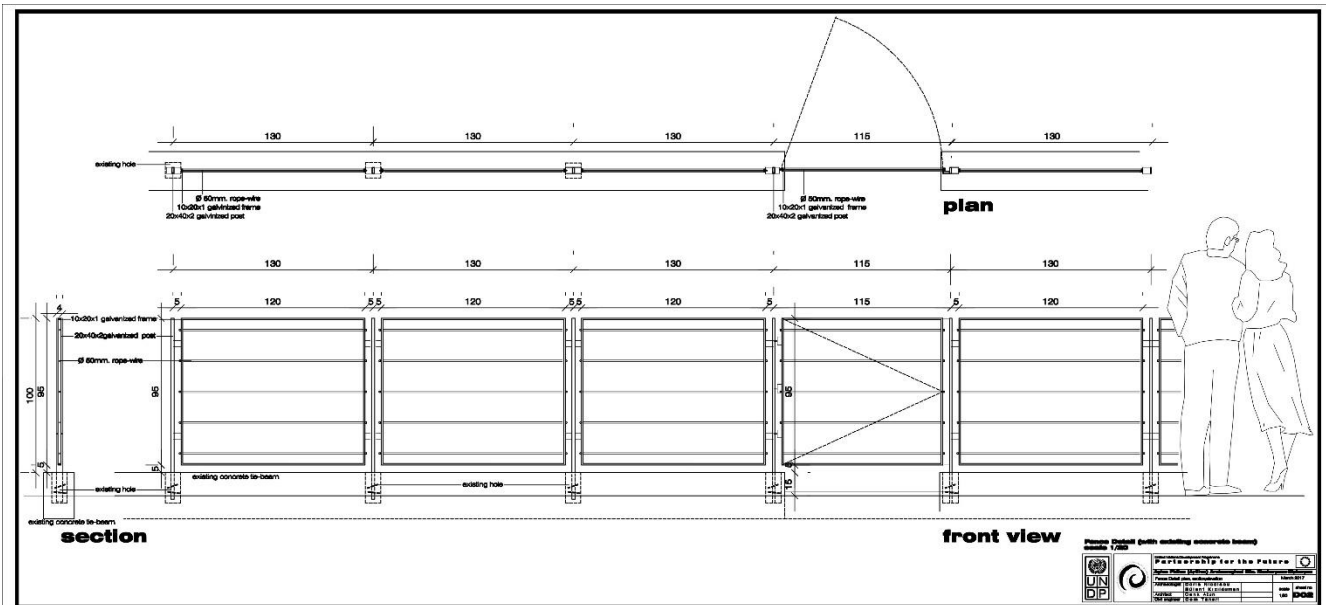
Pl. 3.

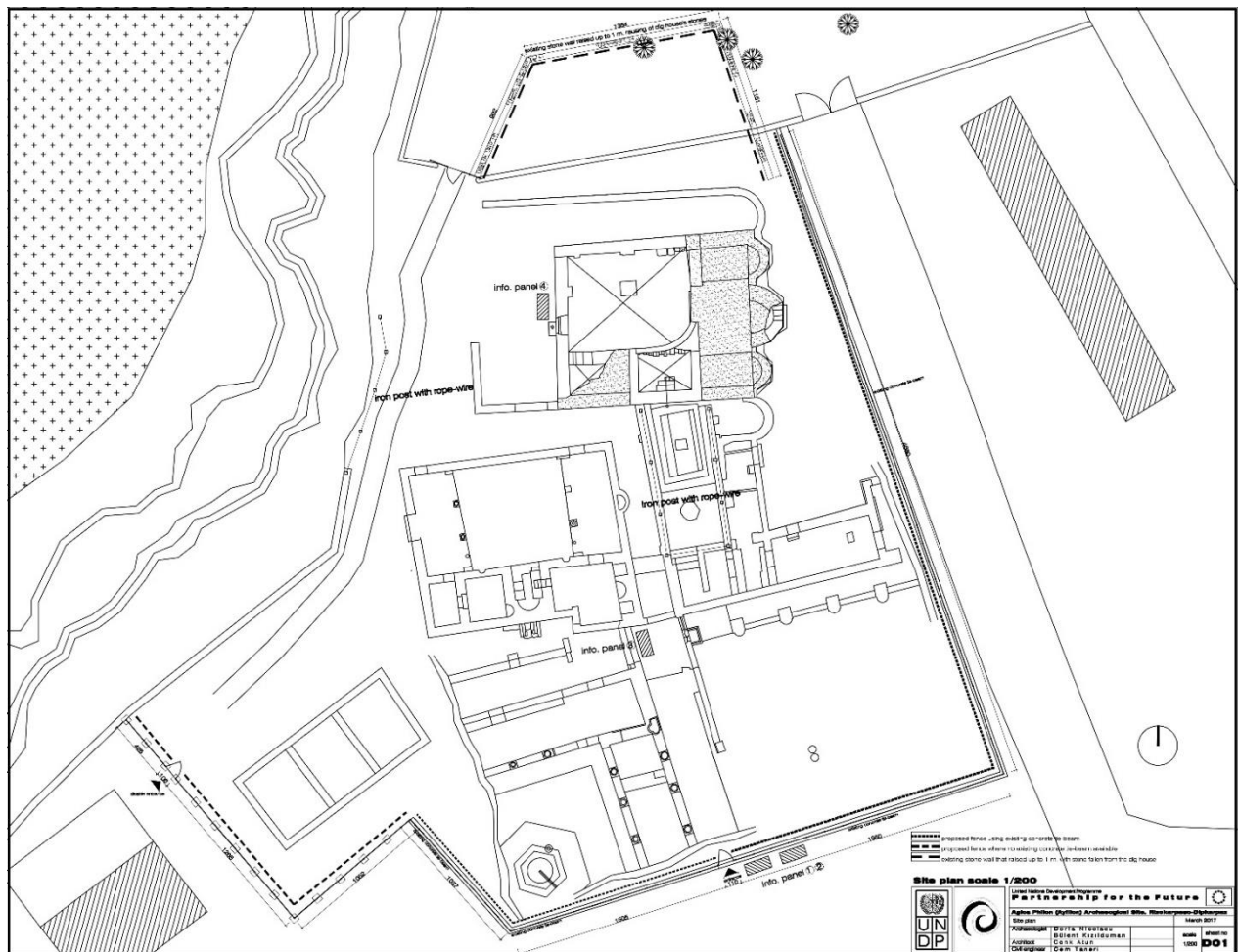


★ Stone to be removed in order to facilitate the rainwater flowing outside the church

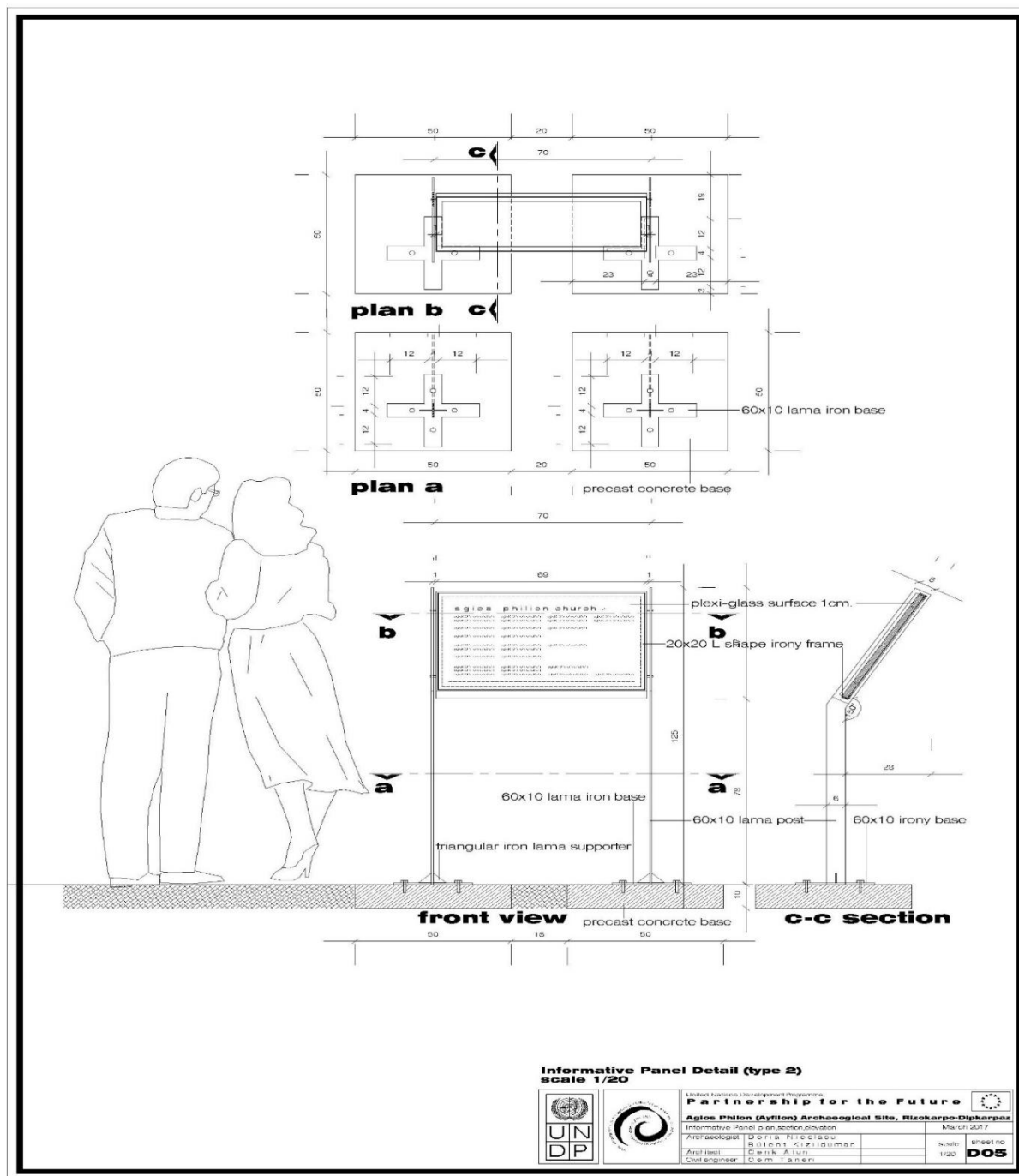


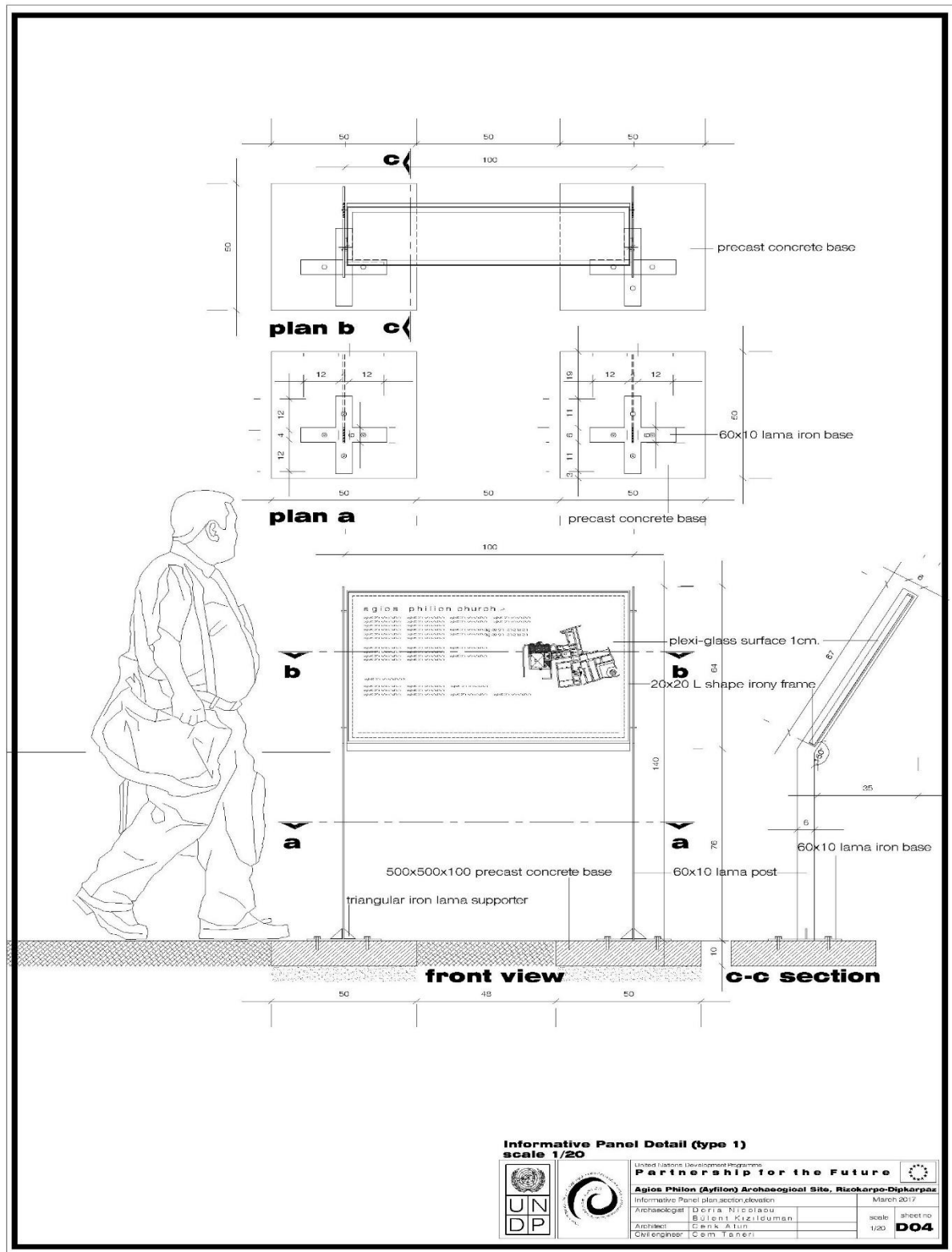
## APPENDIX V

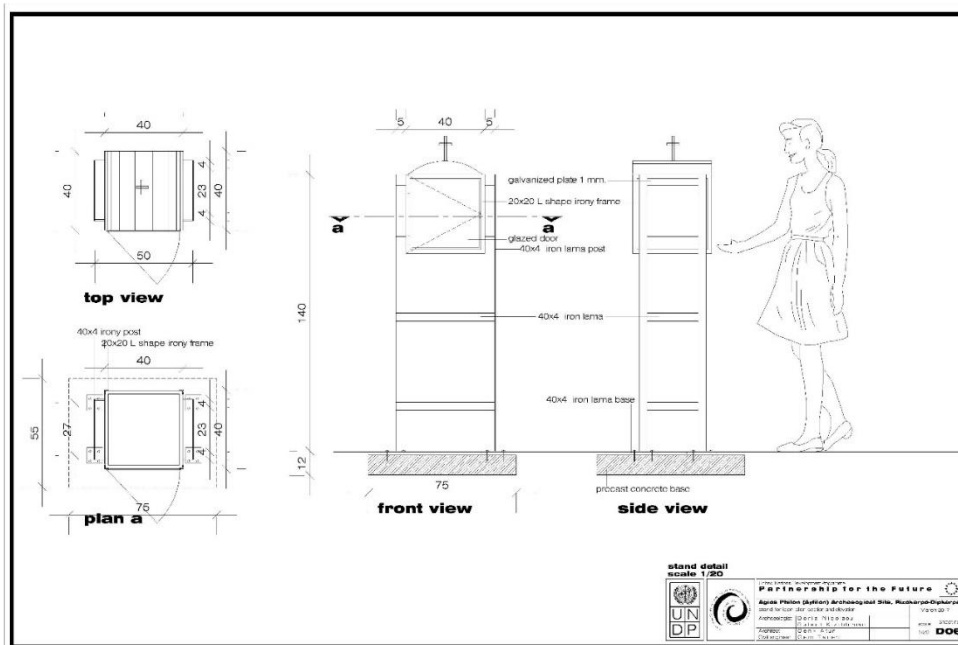
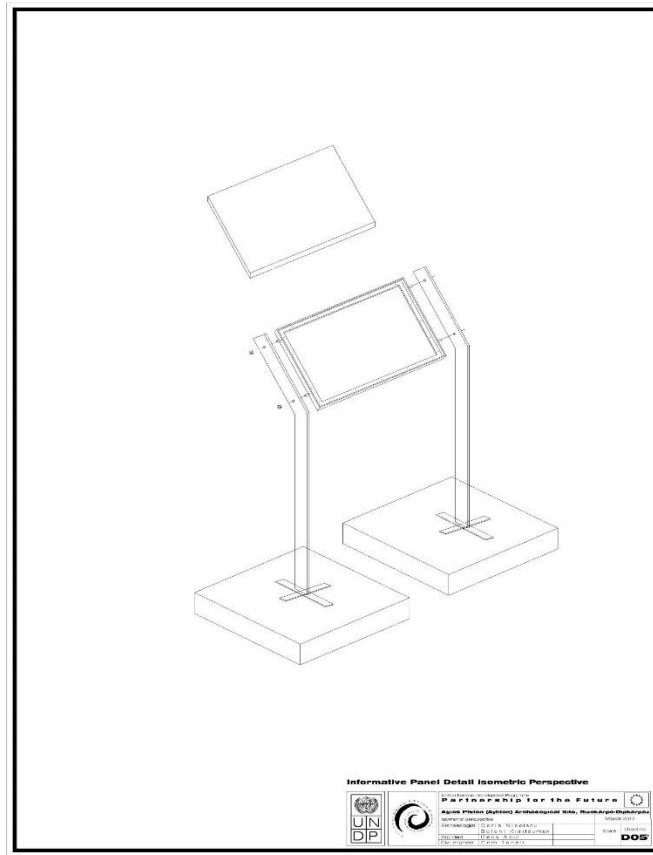




--- Desirable high of the north enclosure wall – use ashlar blocks taken from the fallen ‘dig house’ (avoid using mortar, if possible, dry stone wall).

**APPENDIX VI**





**APPENDIX VII****Remaining Dig House Room**

1. Debris have to be removed from the remaining room until original flooring is found. Original flooring is to be kept.
2. Four remaining walls of the room will be strengthened by removing and reconstructing the walls at loose areas.
  - a. Corner stones of the walls have to be interlocking with both perpendicular walls.
  - b. Stones have to be of the same physical and mechanical properties. Suitable stones that are found among the debris can be used upon approval.
  - c. Pointing of the external surfaces will be made
  - d. Mortar to be used for pointing and plastering will be as follows;
    - i. Mortar Mix: White Cement: Lime: Sand ( 1:1/4:4) By Volume to reach Mean Compressive Strength of 6.5 N/mm<sup>2</sup> at 28 days
3. Inner Surfaces of the room have to be plastered with lime based plaster. Albaria –Master Emaco or equivalent
4. Wooden beams have to be placed with 35cm intervals, Girders have to be round and of 15cm in diameter. Suitable wooden beams that are found among the debris can be used upon approval.
5. Woven reed has to be placed above wooden beams.
6. Bitumen based insulation membrane ( 2mm thick) has to be placed above the woven reed)
7. 10 cm thick concrete (C20) with grid mesh reinforcement (ϕ10 20cm X20cm) will be cast on top with 1% inclination to form a flat roof.
8. Existing South (beneath the balcony) opening is to be used as the entrance door. Existing North and east openings is to be used as windows. The door and the windows and the frames will be made from massive wood. Shutters of the windows and the door will also be made from massive wood and wrought iron will be used for ironmongeries.
9. It is strongly suggested to preserve not only the general outline of the parts of the house which will not be reconstructed, but also other significant features, such as the remains of the balcony, the renderings and the external staircase.
10. This traditional building can be used for storing and protecting some of the architectural members (capitals, bases, columns) found in the area of the archaeological site and others located by our team in the wider area of the ancient city (see APPENDIX I, arch. No. 7 = column base). All the archaeological finds which will be stored inside the restored 'Dig House' should be registered, photographed and drawn by the archaeologist in charge. The catalogue should be submitted to the UNDP.



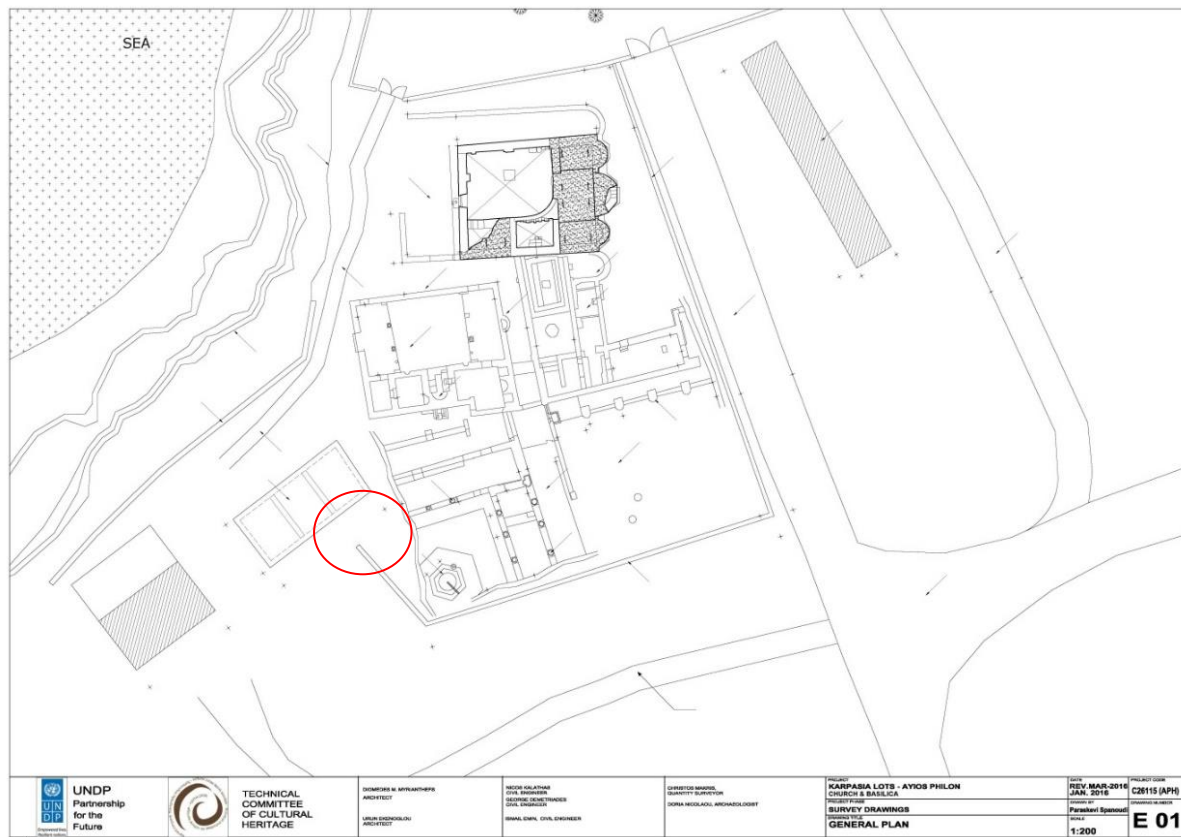


Fig. 1: The 'Dig House'. Room to be restored.



Fig. 2: The 'Dig House'. Room to be restored.



Fig. 3: West facade of the house. Traces of the staircase to be preserved.



Fig. 4: Northwest view of the house.



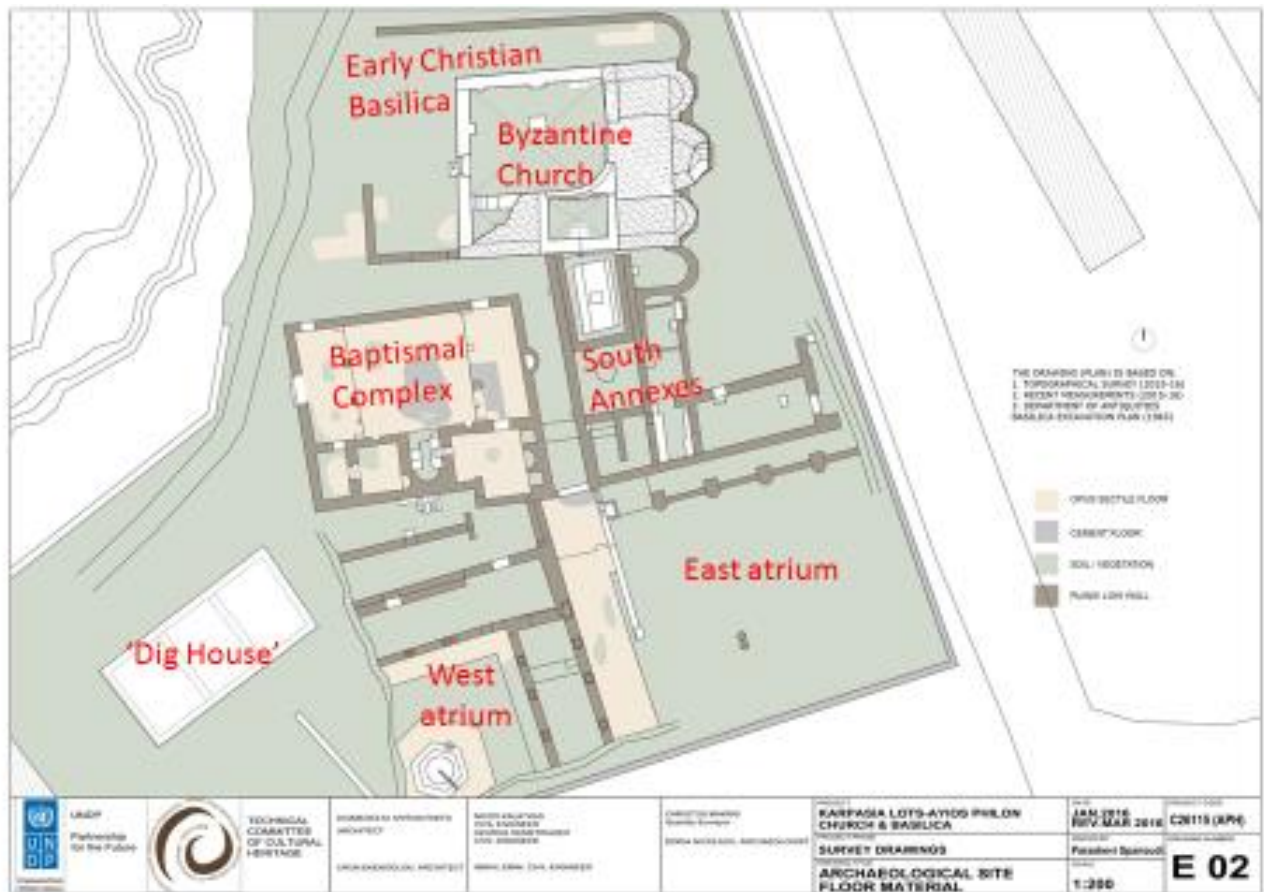


Fig. 5: Southeast view of the house.

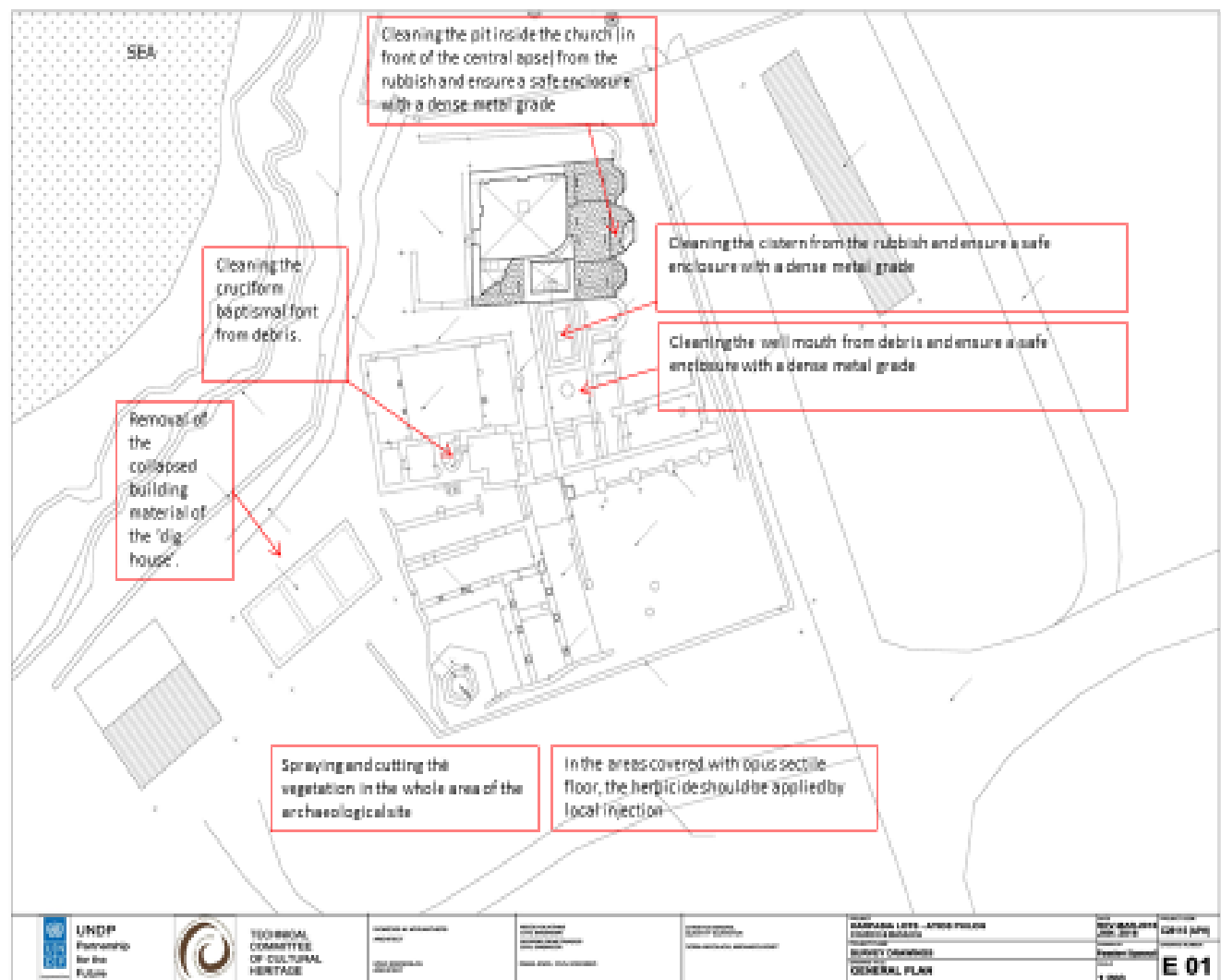


Fig. 6: South facade of the house. Traces of balcony and niche to be preserved.

**Plates:**



Pl. 1: Parts of Agios Philon (Ayfilon) archaeological site as described in the text



Pl. 2: Preparation of the site





